

Format Description of Mission Operation Information Files
Between NASDA, NGN and NOAA

Revision History

Version	Date	Comments
Version 1.0	Dec, 1999	
Version 2.0	Aug, 2001	<p>Corrections of the following items</p> <ul style="list-style-type: none"> ➤ All pages: Revision number of this document is added in each pages. ➤ P.9 Table 2.2: The description “(Except POLDER)” is added in the “TO” column describing receiver for Operation Plan and HK Telemetry files. ➤ ditto: “Catalogue Data” is deleted. ➤ ditto: “HK Data” for CNES(POLDER) is added. ➤ P.10 table 2.3: Description of RTIG is changed to clarify data coverage more precisely. ➤ P.11 Table 2.4: Same change in REQR as in P.10. ➤ P.12 Table 2.5: It is clarified that OPLN for NOAA is only for GLL. ➤ ditto: Description of RTIG is changed to clarify data coverage more precisely. ➤ P.13 Table 2.6: File name of “Acquisition Result” from foreign ground stations is corrected as REAC. ➤ P.14: CTLG file is deleted from the table. ➤ P.19 Fields #15, 17: Add the description for the case that asterisks are set. ➤ P.20 Fields #19, 21, 23, and 31: ditto ➤ P.28 Field #19: Add 'Note' for the case that '999999999' is set. ➤ P.29 Field #9: Add 'Note' for the case that '999999999 99:99:99.999' is set. ➤ P.33 Field #9: Corrected “10 days and 1 day before” to “1 day before”. ➤ P.37: Number of OPLN files is corrected from “seven” to “nine”. ➤ P.39 Field #1: Sensor code of ILAS-II is changed to “IL2”. ➤ P.41 Field #7: Operation mode “LCA” and “ECA” are changed to “LC1”, “LC2”, “EC1”, and “EC2”. ➤ P.47 Field #5: Mode names “REC” and “PRM” are deleted. ➤ P.47 Field #7 and 9: Sentence “OBS operation” is replaced by “operation mode”. ➤ P.47: Deleted descriptions under the table. ➤ P.48 Fields #7 and 9: Sentence “OBS operation” is replaced by “operation mode”.

Version	Date	Comments
		<ul style="list-style-type: none"> ➤ P.61: Descriptions about data coverage (Note 2 and 3) are added. ➤ P.64: Notes about AMSR requests (Old Note 3 and 4) are deleted. ➤ P.70 Field #5: "PRT" is deleted. ➤ P.75 Field #21: Added X3 case. ➤ P.77 Field #13: Value of "Length of Data Record" is replaced by 203. ➤ P.78 Field #19: Length of "File Name of L0 Product" is replaced by 39.
Version 2.1	Jan, 2002	<p>Corrections of the following items</p> <ul style="list-style-type: none"> ➤ P4 : Table 1-3: "Comments" for "MDR Overlap Recording" is revised from "x min. < = overlap time < = 5 min." to "x min. < = overlap time < = 8 min.", and (TBD) is deleted.

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Table 1-1. Terminology for Various Data Units

Unit	Contents	Identification Number
Downlink Path	"Downlink Path" indicates a continuous mission data transfer in a single visible pass, excluding the first and the last PN code transmissions. Each channels, i.e., Qch, Ich, X1 and X3 have the same downlink path number. In general, one downlink path consists of more than one downlink segments.	downlink path number numbering rule Pddddnnssss One number is assigned for a pass
Downlink Segment	"Downlink Segment" denotes a continuous true mission data range in one downlink path, excluding PN code transmissions between mission data transmissions. Each downlink segments accompanies PN code transmissions in front and behind them. One downlink segment yields the unit of level 0 data.	downlink segment number numbering rule Dxxxddddssss-zz This number coincides with the operation segment number of corresponding DT-X/IOCS-Ka.
Operation Segment	"Operation Segment" is a duration in which a sensor continues to operate in a given mode. When a sensor is driven longer than the orbital period in one mode, the operation segment is divided at appropriate boundaries in order to define its maximum length as an orbital period.	operation segment number numbering rule Nxxxddddssss
Acquisition Segment	"Acquisition Segment" equals to an intersection of operation segment and downlink segment. One operation segment is generally divided into several acquisition segments. One downlink segment can also contain more than one acquisition segments.	acquisition segment number numbering rule Sxxxddddssss

Notation: dddd	days from the "origin"(TBD)	0001 to 9999
xxx	specifying mission instrument	see the next page
sss / ssss	sequential number in a day "dddd"	001 (0001) to 999 (9999)
nn	path number	01 to 57
zz	supplemental number in an operation of "sss"	01 to 99

Table 1-2. Definition of Instrument Code "xxx"

	Original Name	xxx	appeared in..		
			Operation Seg.	Downlink Seg.	Acquisition Seg.
Sensor	GLI 1km	GL1	Y	N	Y
	GLI 250m	GL2	Y	N	Y
	AMSR	AMS	Y	N	Y
	SeaWinds	SEA	Y	N	Y
	POLDER	POL	Y	N	Y
	ILAS-2	IL2	Y	N	Y
	DCS	DCS	Y	N	Y
	TEDA	TED	Y	N	Y
	VMS	VMS	Y	N	Y
	DMS	DMS	Y	N	Y
	DMS-1	DM1	N	N	N
	DMS-2	DM2	N	N	N
Channel	X-1 channel	DT1	Y	Y	N
	X-3 channel	DT3	Y	Y	N
	IOCS	ICS	Y	Y	N
Recorder	MDR-1	MD1	Y	N	N
	MDR-2	MD2	Y	N	N
	MDR-3	MD3	Y	N	N
	ODR	ODR	Y	N	N

Used in L0RL file

Y: used in the segment number

N: not used

Table 1-3. Characteristic Times Determined by MMO(1/2)

Terms of Time	Description	Comments
X-band AOS X-band LOS	These indicate dates of AOS and LOS of ground stations for ADEOS-II, respectively. AOS and LOS are determined for a virtual masking of EL = 0 deg or 5 deg. Real timings of data transmission are calculated according to true masking of each ground stations.	MMO preserves each masking information and corresponding nominal RSP values. The date is calculated on the basis of up-to-date predicted orbital data.
Ka-band AOS Ka-band LOS	These indicate service time which is allocated to ADEOS-II. Every constraint is taken into account.	Reference of the date comes from NASDA/TACC. The date is calculated on the basis of up-to-date predicted orbital data.
Date of Acquisition	Time to start or stop data transmission. The ground time is set.	Interval between the begin and end dates of acquisition is shorter than that between AOS and LOS because of time necessary for establish data link.
Date of Downlink Path	Each downlink paths include both of true mission data and PN code intervals. This downlink path indicates a start and stop of mission data transmission excluding the first and the last PN code sets.	The start and the stop equal to a start of the first downlink segment and a stop of the last one, respectively.
Date of Downlink Segment	The time corresponds to start and stop of a downlink segment of true mission data. The ground time is set.	1 min. <= length of downlink segment <= 45 min.(TBD)
Date of Operation Segment	The time corresponds to start and stop of an operation segment. The observation time(satellite time) is set.	x min. <= length of operation segment <= 101 min. (TBD)
Date of Acquisition Segment	The time corresponds to start and stop of an acquisition segment. The observation time(satellite time) is set.	x min. <= length of operation segment <= 101 min. (TBD)
Lock-On/Off Date	This denotes time of lock-on and off, corresponding to the date of downlink path in the ground time.	Reference comes from the ground stations.
Date of Recording	This denotes time of RAW data recording, corresponding to the date of downlink path in the ground time.	Reference comes from the ground stations.

Table 1-3. Characteristic Times Determined by MMO(2/2)

Terms of Time	Description	Comments
Time of PN Code Transmission	This is a time for PN code duration occurring between true mission data transmissions, which is treated as a variable parameter by MMO.	tentatively defined as 30 sec.
MDR Start/Stop Margin	This indicates a time that is necessary for MDR to achieve steady motion after the start and before the stop of every operation mode, which is treated as a variable parameter by MMO.	
MDR Overlap Recording	When MDR is changed to another, there must be overlap of recording between two MDRs. It is defined by time, and its value is treated as a variable parameter by MMO.	x min. <= overlap time <= 8 min.
Overlap of Mission Data	Sensor mission data have overlapped portion resulting from MDR overlap recording, split reproduction and MRT/MDR overlap. User can read how long overlap occurs from the Operation Plan(OPLN) information.	Each overlap depends on a result of mission operation planning by MMO.
Time from Ascending Node	Time from ascending node(A.N.) for several kinds of event information is added in the mission operation information files. The time always appears with RSP value.	OBC on ADEOS-II controls mission instruments with the interval of 1 sec from A.N.(0 at A.N.). The value exactly coincides with OBC timings.

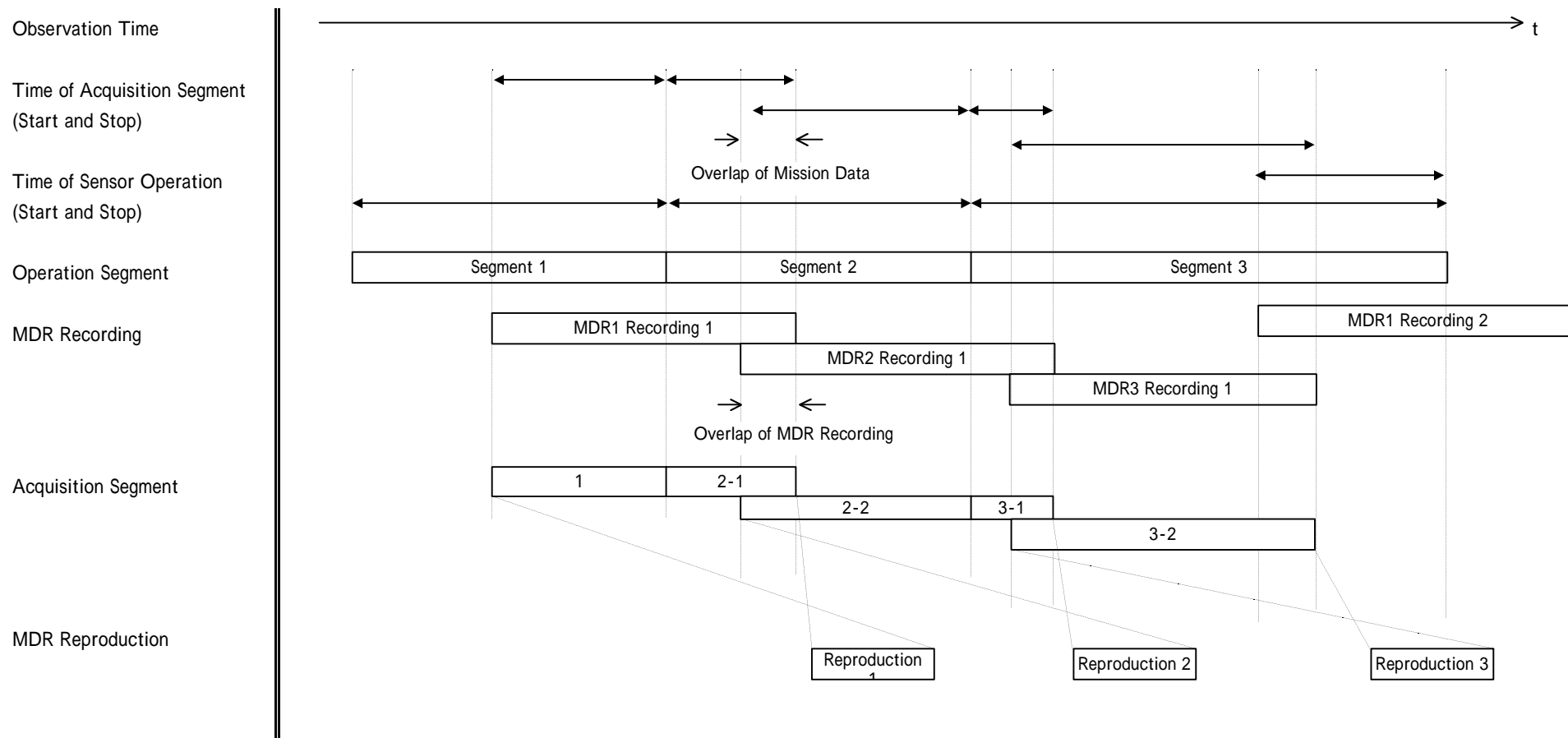
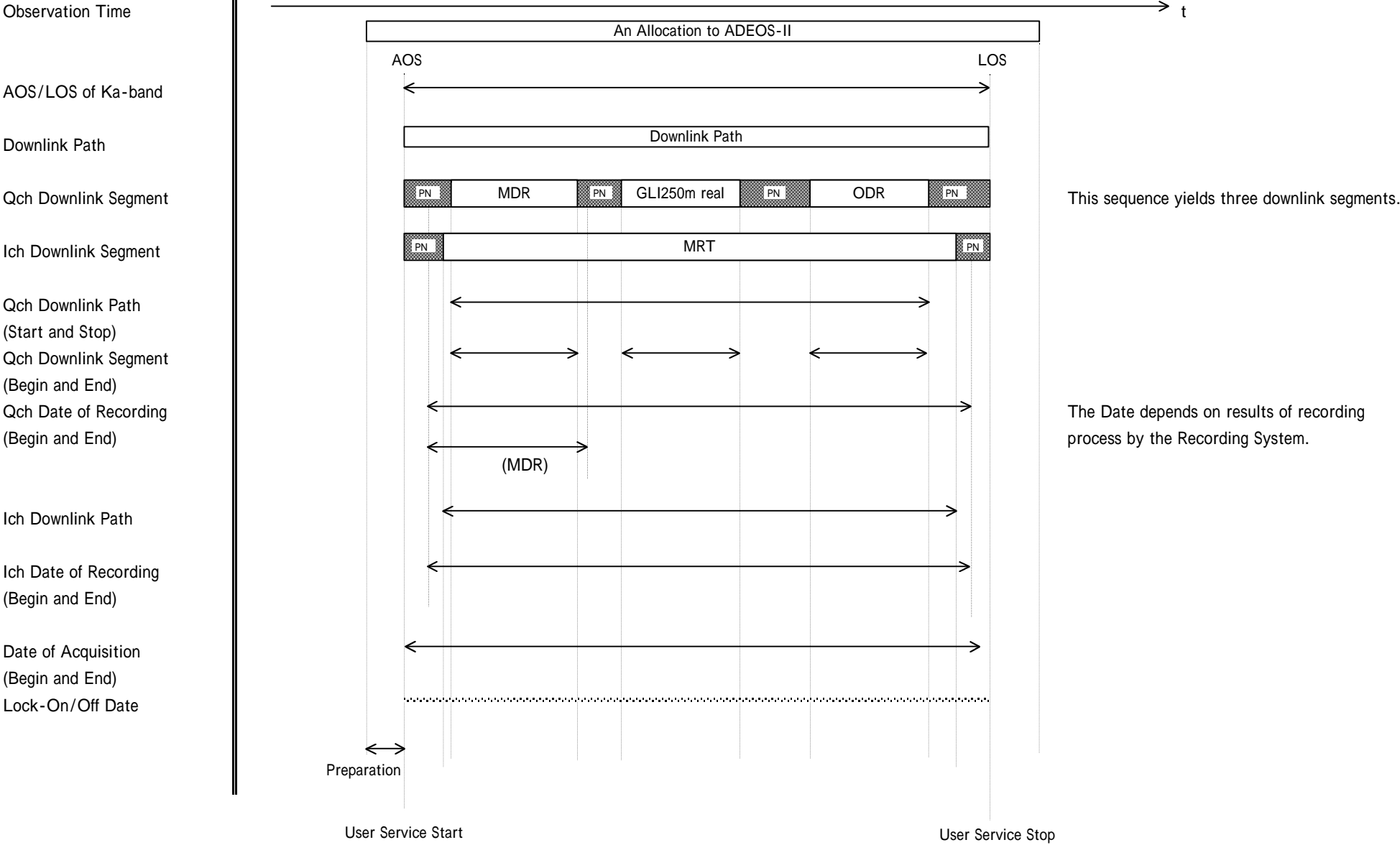
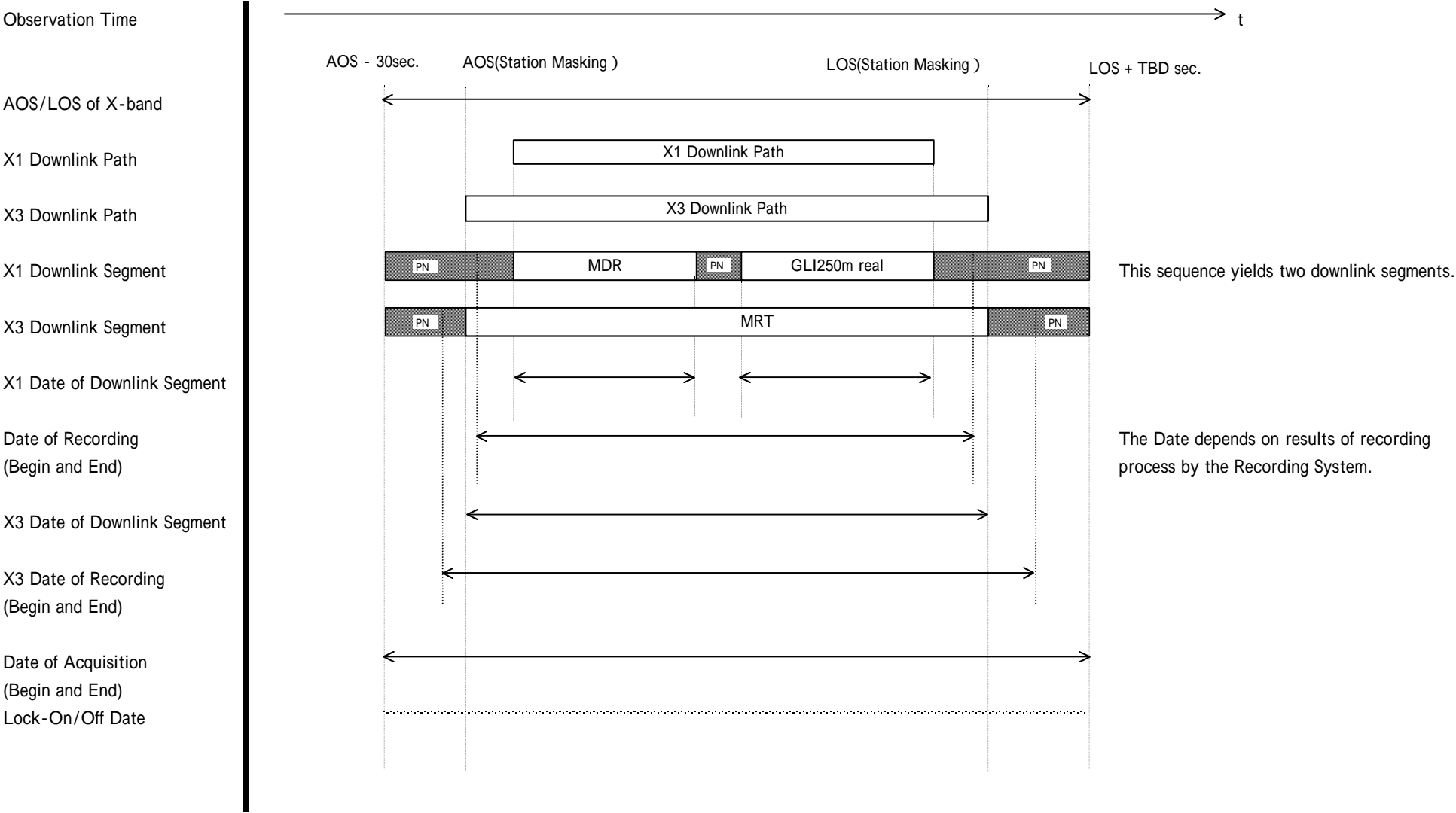


Figure 1-1: Inter-relationships between Several Terminologies



Example Mode 1 Operation Sequence

Figure 1-2: Terms Applied for Mode 1 Operation



Example Mode 2 Operation Sequence

Figure 1-3: Terms Applied for Mode 2 Operation

Table 2.1 List of Common Interface Files

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Status Information (common information)	MMO	All	ASCII character set	STADnnnnnn	9:00 UTC	Delivery: Wednesday 1 day before scheduled maneuver Volume: one file for a scheduled maneuver
Predicted Orbital Data (common information)	MMO	All	ASCII character set	EPyyyyymmdd	8:00 UTC	Delivery: Case 1: delivered on Monday, Wednesday, Friday Case 2: delivered everyday Volume: same day and future 4 days 1 file = 1 day (UTC 0:00 - 23:59)
Definitive Orbital Data (common information)	MMO	All	ASCII character set	EDyyyyymmdd	8:00 UTC	Delivery: same sa ELMP Volume: previous 3 days 1 file = 1 day (UTC 0:00 - 23:59)
Time Difference Data (common information)	MMO	All	ASCII character set	TDyyyyymmdd	7:00 UTC	Delivery: every day Volume: daily report
Operation Results (common information)	MMO	All	ASCII character set	ORSTnnnnnn	8:00 UTC	Delivery: every day Volume: daily results

Table 2.2 List of Interface Files with the Sensor Providers (specific data)

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Reply to Operation Request	MMO	Sensor Provider	ASCII character set	REQAnnnnnn	any time	Delivery: after receipt of REQQ Volume: number of errors in REQQ
Operation Plan	MMO	Sensor Provider (Except POLDER)	ASCII character set	OPLNxxxxnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Mon.)
Operation Plan (CNES/POLDER)	MMO	CNES	ASCII character set	OPL1nnnnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Tue.)
HK Telemetry	MMO	Sensor Provider (Except POLDER)	BINARY	HKSSPYMMDDmm	any time	
HK Data	MMO	CNES(POLDER)	BINARY	HKDTPOLDEnnnn	5:00 UTC	Delivery: every day
Level 0 Product Media Shipment Report	MMO	CNES(POLDER)	ASCII character set	SRZDnnnnnn	-	Delivery: once per week 1 File = 1 Tape
Operation Request	Sensor Provider	MMO	ASCII character set	REQQnnnnnn	7:00 UTC	Delivery: by Thursday 2 weeks before the target period Volume: requests for 1 week (Wed. to next Tue.)
Level 0 Product Readability (media) Report	CNES(POLDER)	MMO	ASCII character set	RDZDnnnnnn	-	Delivery: once per week 1 File = 1 Tape
SeaWinds Parameter (JPL/SeaWinds)	JPL(SeaWinds)	TACC	ASCII character set	SWPFnnnnnn	any time	Delivery: any time JPL needs

Table 2.3 List of Interface Files with the NASA Station (specific data)

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Station Operation Request	MMO	NASA Station	ASCII character set	REQRnnnnnn	8:00 UTC	Delivery: 1st: Thursday 3 weeks before the target period 2nd: Monday 2 weeks before the target period Volume: requests for 1 week (Wed. to next Tue.)
Operation Plan	MMO	NASA Station	ASCII character set	OPLNxxxxnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Mon.)
Acquisition Plan	MMO	NASA Station	ASCII character set	SHAQnnnnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: acquisition plan for 1 week (Wed. to Tue.)
Level 0 Processing Information	MMO	NASA Station	ASCII character set	LV0Pnnnnnn	8:00 UTC	Delivery: 3 times per week (Mon, Wed, Fri) Volume: 1) Monday delivery 2 days; Wednesday and Thursday 2) Wednesday delivery 2 days; Friday and Saturday 3) Friday delivery 3 days; Sunday, Monday and Tuesday
NRT Product Processing Information	MMO	NASA Station	ASCII character set	RTIGnnnnnn	8:00 UTC	delivered in the same schedule with LV0P 1 file contains 1 operation segment
RAW Data Readability Report	MMO	NASA Station	ASCII character set	RDRMnnnnnn	6:00 UTC	any time when RAW tape processing at EOC completed
Reply to Station Operation Request	NASA Station	MMO	ASCII character set	STGSnnnnnn	1:00 UTC	Delivery: one day after receipt of REQR 1st: Friday 3 weeks before the target period 2nd: Tuesday 2 weeks before the target period Volume: reply for 1 week request
Recording Results	NASA Station	MMO	ASCII character set	RERCnnnnnn (RERBnnnnnn)	after downlink	Delivery: every downlink 1 file for a downlink path
Level 0 Processing Results	NASA Station	MMO	ASCII character set	L0RLnnnnnn	after L0 processing	any time when L0 processing at NASA completed 1 file for a downlink segment
RAW Data Shipment Report	NASA Station	MMO	ASCII character set	SRRMnnnnnn	1:00 UTC	any time when RAW tape shipped from NASA Station

Table 2.4 List of Interface Files with Kiruna Station (specific data)

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Predicted Orbital Data including IERS data	MMO	Kiruna Station	ASCII character set	ELyyyyymmdd	8:00 UTC	Delivery: Case 1: delivered on Monday, Wednesday, Friday Case 2: delivered everyday Volume: same day and future 4 days 1 file = 1 day (UTC 0:00 - 23:59)
Station Operation Request	MMO	Kiruna Station	ASCII character set	REQRnnnnnnn	8:00 UTC	Delivery: 1st: Thursday 3 weeks before the target period 2nd: Monday 2 weeks before the target period Volume: requests for 1 week (Wed. to next Tue.)
Operation Plan	MMO	Kiruna Station	ASCII character set	OPLNxxxxnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Tue.)
Acquisition Plan	MMO	NASA Station	ASCII character set	SHAQnnnnnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: acquisition plan for 1 week (Wed. to Tue.)
Level 0 Processing Information	MMO	NASA Station	ASCII character set	LV0Pnnnnnnn	8:00 UTC	Delivery: 3 times per week (Mon, Wed, Fri) Volume: 1) Monday delivery 2 days; Wednesday and Thursday 2) Wednesday delivery 2 days; Friday and Saturday 3) Friday delivery 3 days; Sunday, Monday and Tuesday
NRT Product Processing Information	MMO	NASA Station	ASCII character set	RTIGnnnnnnn	8:00 UTC	delivered in the same schedule with LV0P 1 file = 1 day
RAW Data Readability Report	MMO	Kiruna Station	ASCII character set	RDRMnnnnnnn	6:00 UTC	any time when RAW tape processing at EOC completed
Reply to Station Operation Request	Kiruna Station	MMO	ASCII character set	STGSnnnnnnn	1:00 UTC	Delivery: one day after receipt of REQR 1st: Friday 3 weeks before the target period 2nd: Tuesday 2 weeks before the target period Volume: reply for 1 week request
Recording Results	Kiruna Station	MMO	ASCII character set	RERCnnnnnnn (RERBnnnnnnn)	after downlink	Delivery: every day 1 file for a downlink path
Level 0 Processing Results	Kiruna Station	MMO	ASCII character set	L0RLnnnnnnn	after L0 processing	any time when L0 processing at Kiruna completed 1 file for a downlink segment
RAW Data Shipment Report	Kiruna Station	MMO	ASCII character set	SRRMnnnnnnn	1:00 UTC	any time when RAW tape shipped from Kiruna

Table 2.5 List of Interface Files with NOAA (specific data)

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Operation Plan	MMO	NOAA	ASCII character set	OPLNxxxxnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Mon.) only for GLI information
NRT Product Processing Information	MMO	NOAA	ASCII character set	RTIGnnnnnn	8:00 UTC	Delivery: 3 times per week (Mon, Wed, Fri) Volume: 1) Monday delivery 2 days; Wednesday and Thursday 2) Wednesday delivery 2 days; Friday and Saturday 3) Friday delivery 3 days; Sunday, Monday and Tuesday 1 file contains 1 operation segment

Table 2.6 List of Interface Files with Foreign Station (specific data)

I/F DATA NAME	FROM	TO	FORM	File Name	Delivery Time	COMMENTS
Reply to Operation Request	MMO	Foreign Station	ASCII character set	REQAnnnnnn	any time	Delivery: after receipt of REQQ Volume: number of errors in REQQ
Operation Plan (only for GLI 250m)	MMO	Foreign Station	ASCII character set	OPLNxxxnnn	8:00 UTC	Delivery: Thursday 1 week before the target week Volume: operation plan for 1 week (Tue. to next Mon.)
Operation Request (GLI 250m real-time)	Foreign Station	MMO	ASCII character set	REQQnnnnnn	1:00 UTC	Delivery: Thursday 4 weeks before the target period Volume: requests for 1 week (Wed. to next Tue.)
Acquisition Results	Foreign Station	MMO	ASCII character set	REACnnnnnn	after downlink	Delivery: every day 1 file for a downlink path

Data Coverage of Mission Operation Information Files (MOIF)

Data coverage of each Mission Operation Information Files (MOIF) is determined in three variable ways. Those methods are designed to prevent ambiguity as a definition, and to be proper for their objectives.

Type 1 of data coverage:

Start from the first ascending node after 0:00 UTC,

i.e. the first revolution of a day,

End just before the first ascending node after 24:00 UTC,

i.e. the last revolution of another day.

Type 2 of data coverage:

Start at 0:00 UTC,

End just before 24:00 UTC.

Type 3 of data coverage:

Start from the path including 0:00 UTC,

End at the path including 24:00 UTC.

Type 4 of data coverage:

Depends on specific characteristics of information file.

Files and fundamental rules to determine their data coverage are summarized in the table below.

File Name	Contents	Type	Notes
REQQ	operation request	1	each operation segment
REQR	station operation request	1	
STGS	reply to REQR	1	
REQA	error report of REQQ	1	
OPLN	operation plan	1	
OPL1	operation plan for CNES (POLDER)	1	
RTIG	NRT product processing information	4	
SHAQ	acquisition plan	1	
LVOP	L0 processing information	1	
ORST	operation results	1	
RERC	recording result	4	each downlink path
L0RL	L0 processing result	4	each downlink segment
HKDT	house keeping data (backup)	4	
ELMP	predicted orbital data	2	
ELMD	definitive orbital data	2	
TMDF	time difference data	3	
RDRM	RAW data readability report	4	each tape
SRRM	RAW data shipment report	4	each tape
SRZD	L0 product shipment report (CNES)	4	each tape
RDZD	L0 product readability report (CNE)	4	each tape
STAD	status information	4	with the update of information

In order to clarify data coverage concretely for each type 1 MOIF, path calendar of ADEOS-2 is listed in table 3-1, and data coverage in terms of path is shown in table 3-2.

Table 3-1. Path Calendar of ADEOS-2

date	day of the week	RSP at 0:00 UTC		Revolution number and path number of a day														
		path	A.L.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
11/01/2000	Wed	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/02/2000	Thu	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/03/2000	Fri	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/04/2000	Sat	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/05/2000	Sun	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/06/2000	Mon	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/07/2000	Tue	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/08/2000	Wed	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/09/2000	Thu	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/10/2000	Fri	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/11/2000	Sat	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/12/2000	Sun	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/13/2000	Mon	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/14/2000	Tue	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/15/2000	Wed	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/16/2000	Thu	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/17/2000	Fri	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/18/2000	Sat	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/19/2000	Sun	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/20/2000	Mon	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/21/2000	Tue	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/22/2000	Wed	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/23/2000	Thu	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/24/2000	Fri	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/25/2000	Sat	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/26/2000	Sun	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
11/27/2000	Mon	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
11/28/2000	Tue	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
11/29/2000	Wed	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
11/30/2000	Thu	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/01/2000	Fri	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
12/02/2000	Sat	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
12/03/2000	Sun	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
12/04/2000	Mon	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/05/2000	Tue	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
12/06/2000	Wed	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
12/07/2000	Thu	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
12/08/2000	Fri	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/09/2000	Sat	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
12/10/2000	Sun	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
12/11/2000	Mon	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
12/12/2000	Tue	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/13/2000	Wed	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
12/14/2000	Thu	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
12/15/2000	Fri	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
12/16/2000	Sat	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/17/2000	Sun	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3
12/18/2000	Mon	3	37.50	7	11	15	19	23	27	31	35	39	43	47	51	55	2	
12/19/2000	Tue	2	127.50	6	10	14	18	22	26	30	34	38	42	46	50	54	1	
12/20/2000	Wed	1	217.50	5	9	13	17	21	25	29	33	37	41	45	49	53	57	
12/21/2000	Thu	57	307.50	4	8	12	16	20	24	28	32	36	40	44	48	52	56	3

Table 3-2. Paths for each Mission Operation Information Files(MOIF)

File Name	Coverage	beginning	end	number	beginning	end	number	beginning	end	number
OPLN	Date	Tuesday	Monday	7						
	Path	4	1	100						
		5	2	100						
		6	3	100						
		7	57	99						
REQQ REQR STGS SHAQ	Date	Wednesday	Tuesday	7						
	Path	4	1	100						
		5	2	100						
		6	3	100						
		7	57	99						
ORST	Date	a day	same day	1						
	Path	4	3	15						
		7	2	14						
		6	1	14						
		5	57	14						
LV0P RTIG	Date	Wednesday	Thursday	2	Friday	Saturday	2	Sunday	Tuesday	3
	Path	4	2	29	6	57	28	4	1	43
		5	3	29	7	1	28	5	2	43
		6	57	28	4	2	29	6	3	43
		7	1	28	5	3	29	7	57	42

"number" for "Date Coverage" is in days.

"number" for "Path Coverage" is in paths.

ORST is a common use file prepared by MMO to inform all agencies of the operational results of all mission instruments onboard ADEOS-II based on RERC files. ORST includes the data acquisition results and recording results of NASDA/EOC, Kiruna station, NASA ground stations and foreign ground stations.

ORST is generated everyday before 8:00 UTC and covers basically one day length of acquisition and recording results.

1. File Structure

Table 1. File Structure

ORST Header Record
Data Record 1: Result of Downlink Seg. #1
Data Record 2: Result of Downlink Seg. #2
Data Record 3: Result of Downlink Seg. #3
Data Record n: Result of Downlink Seg. #n

Notes: 1. All fields are written in ASCII character code.

2. See Table 3-2 for ORST data coverage.

2. Record Structure

Table 2. ORST Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	ORSTnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2' (fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '****' (fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date (UTC)	YYYYMMDD	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time (UTC)	hh:mm:ss	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 179' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of downlink segments reported here	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data (UTC)	YYYYMMDD '*****' (fixed)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data (UTC)	YYYYMMDD '*****' (fixed)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date,UTC)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. ORST Data Record (1/2)

No.	Field	Contents Description	Byte	Byte #
1	Downlink Path Number	P d d d d n n s s s s	11	0
2	blank	0x20 (delimiter)	1	11
3	Downlink Segment Number	D x x x d d d s s s - z z	14	12
4	blank	0x20 (delimiter)	1	26
5	Begin Date of Acquisition(UTC)	YYYYMMDD hh:mm:ss absolute time for the start of downlink seg.	17	27
6	blank	0x20 (delimiter)	1	44
7	End Date of Acquisition(UTC)	YYYYMMDD hh:mm:ss absolute time for the stop of downlink seg.	17	45
8	blank	0x20 (delimiter)	1	62
9	Acquisition Frequency Band	XXX 'X1 ': X1 band 'X3 ': X3 band 'QCH': Qch band 'ICH': Ich band	3	63
10	blank	0x20 (delimiter)	1	66
11	Acquisition Mode	XXX 'GLI' : real-time GLI250m data 'MDR' : MDR reproduction of multiple data 'ODM' : ODR reproduction of multiple data 'ODR' : ODR reproduction of GLI250m data 'MRT' : multiple real-time data capture	3	67
12	blank	0x20 (delimiter)	1	70
13	Station Code	XXXX 'HEOC': NASDA/EOC(Hatoyama) 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station	4	71
14	blank	0x20 (delimiter)	1	75
15	RAW Tape Number	DSSMnnnnnn D: indicating D1 cassette SS: 22->HEOC, 65->ASF, 66->WFF, 70->KRNS M: 2->Master tape, 3->Backup tape 9->Work Tape nnnnnn: 000001 to 899999 '*****' for REDU or X3 downlink	10	76
16	blank	0x20 (delimiter)	1	86
17	Positional ID of Recording Start	NNNNNN '*****' for REDU or X3 downlink	6	87
18	blank	0x20 (delimiter)	1	93

Table 3. ORST Data Record (2/2)

No.	Field	Contents Description	Byte	Byte #
19	Positional ID of Recording Stop	NNNNNN '*****' for REDU or X3 downlink	6	94
20	blank	0x20 (delimiter)	1	100
21	Begin Date of Recording(UTC)	YYYYMMDD hh:mm:ss '*****' for REDU or X3 downlink	17	101
22	blank	0x20 (delimiter)	1	118
23	End Date of Recording(UTC)	YYYYMMDD hh:mm:ss '*****' for REDU or X3 downlink	17	119
24	blank	0x20 (delimiter)	1	136
25	Lock-On Date(UTC)	YYYYMMDD hh:mm:ss	17	137
26	blank	0x20 (delimiter)	1	154
27	Lock-Off Date(UTC)	YYYYMMDD hh:mm:ss	17	155
28	blank	0x20 (delimiter)	1	172
29	Acquisition Status	N 'G': status 98 % 'P': status < 98 % 'N': No Data	1	173
30	blank	0x20 (delimiter)	1	174
31	Recording Status	NNN status in % '****' for REDU or X3 downlink	3	175
32	Record End	0x0A	1	178
合計			179	

ELMP is the common use file prepared by MMO to inform all agencies of orbital data. ELMP includes predictive ephemeris data for station antenna pointing and covers one day of data with one minute intervals.

ELMP are usually updated before 8:00 UTC on Monday, Wednesday and Friday.

However, in the period of high solar activity, ELMP data are updated everyday.

MMO makes 5 ELMP files, which include the data of the same day and future 4 days, available each time updates are performed.

1. File Structure

Table 1. File Structure

ELMP Header Record
Data Record 1: Orbital Vector 1
Data Record 2: Orbital Vector 2
:
:
Data Record 1440: Orbital Vector 1440

Notes: 1. All fields are described in ASCII character code.

2. Orbital vectors are provided for each minute of the day.

3. One day from UTC 0:00 is contained in one ELMP/ELMD file.

2. Record Structure

Table 2. ELMP Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	EPyyyyymmdd yyyyymmdd: date of the data(year, month, day)	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO'(fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '****'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date (UTC)	YYYYMMDD	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time (UTC)	hh:mm:ss	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 90' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNN ' 1440' (fixed)	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data (UTC)	YYYYMMDD	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data (UTC)	YYYYMMDD date usually the same as field #17	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date,UTC)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. ELMP Data Record

No.	Field	Contents Description	Bytes	Byte #
1	Time for Orbital Data	NNNNN.NNNNNNNN MJD in UTC	14	0
2	blank	0x20 (delimiter)	1	14
3	Position Vector X component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	15
4	blank	0x20 (delimiter)	1	28
5	Position Vector Y component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	29
6	blank	0x20 (delimiter)	1	42
7	Position Vector Z component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	43
8	blank	0x20 (delimiter)	1	56
9	Velocity Vector X component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	57
10	blank	0x20 (delimiter)	1	67
11	Velocity Vector Y component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	68
12	blank	0x20 (delimiter)	1	78
13	Velocity Vector Z component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	79
14	Record End	0x0A	1	89
Sum			90	

ELMD is the common use file prepared by MMO to inform all agencies of orbital data. ELMD includes definitive ephemeris data for precise processing of image data and covers one day of data with one minute intervals.

ELMD are usually updated before 8:00 UTC on Monday, Wednesday and Friday.

However, in the period of high solar activity, ELMD data are updated everyday.

MMO makes 3 ELMD files, which include the data of the previous 3 days, available each time updates are performed.

1. File Structure

Table 1. File Structure

ELMD Header Record
Data Record 1: Orbital Vector 1
Data Record 2: Orbital Vector 2
:
:
Data Record 1440: Orbital Vector 1440

Notes: 1. All fields are described in ASCII character code.

2. Orbital vectors are provided for each minute of the day.

3. One day from UTC 0:00 is contained in one ELMP/ELMD file.

2. Record Structure

Table 2. ELMD Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	ED y y yymmdd yyyymmdd: date of the data(year, month, day)	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO'(fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '****'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 90' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN ' 1440' (fixed)	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD date(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD date(UTC) usually the same as field #17	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. ELMD Data Record

No.	Field	Contents Description	Bytes	Byte #
1	Time for Orbital Data	NNNNN.NNNNNNNN MJD in UTC	14	0
2	blank	0x20 (delimiter)	1	14
3	Position Vector X component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	15
4	blank	0x20 (delimiter)	1	28
5	Position Vector Y component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	29
6	blank	0x20 (delimiter)	1	42
7	Position Vector Z component	SNNNNN.NNNNNN S: sign ('-' for negative value) value is in km	13	43
8	blank	0x20 (delimiter)	1	56
9	Velocity Vector X component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	57
10	blank	0x20 (delimiter)	1	67
11	Velocity Vector Y component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	68
12	blank	0x20 (delimiter)	1	78
13	Velocity Vector Z component	SNN.NNNNNN S: sign ('-' for negative value) value is in km/sec	10	79
14	Record End	0x0A	1	89
Sum			90	

TMDF is a common use file prepared by MMO to inform all agencies of the relation between space time and time counter onboard ADEOS-II.

The relation is approximated by a linear function and the two components of its linear coefficients are set in TMDF file. MMO will prepare TMDF before 7:00 UTC everyday. TMDF covers 1 day of time difference data.

There are two kinds of TMDF,

- 1) one is the data calculated by TACC for Mode 1 operation,
- 2) another is those done by EOC/MMO for Mode 2 operation.

1. File Structure

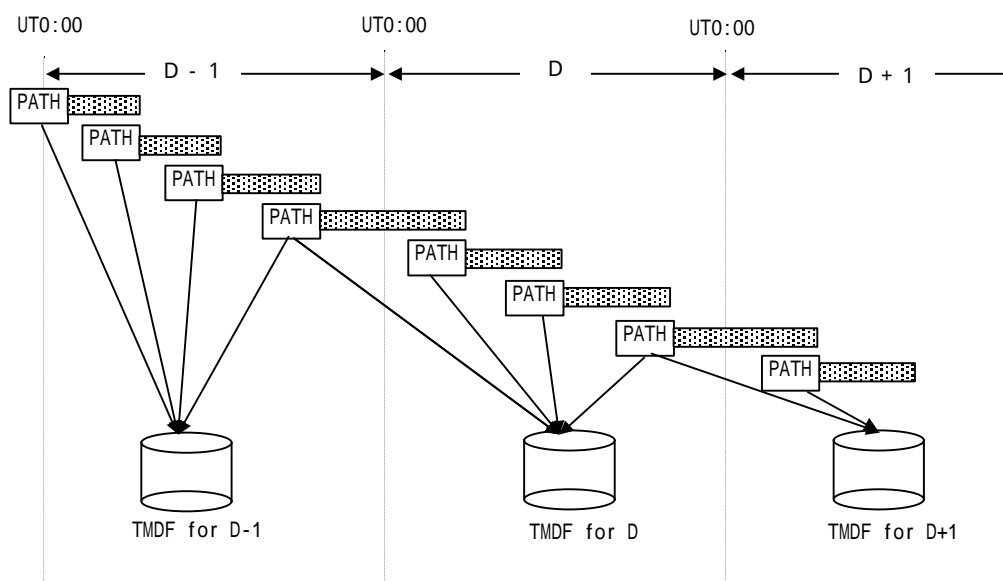
Table 1. File Structure

TMDF Header Record
Data Record 1: Time Difference #1
Data Record 2: Time Difference #2
Data Record n: Time Difference #n

Notes: 1. TMDF data are calculated by using predictive ephemeris data.

2. Method of data storage is illustrated below.

The linear function is calculated every visible path, and one day length of those data are stored into one file. However, there will appear the same data of boundary pass between two days in the successive two TMDF files.



2. Record Structure

Table 2. TMDF Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	TDyyyyymmdd yyyyymmdd: date of the data(year, month, day)	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO'(fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '*****' (fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date (UTC)	YYYYMMDD	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time (UTC)	hh:mm:ss	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 113' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of time difference data	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data (UTC)	YYYYMMDD	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data (UTC)	YYYYMMDD see Note	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date, UTC)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Note: When the latest time-difference data are included in the data record, '99999999' is set in field #19.

Table 3. TMDF data Record

No.	Field	Contents Description	Byte	Byte #
1	Orbit Total Number of the Pass	NNNNN ***** (fixed)	5	0
2	blank	0x20 (delimiter)	1	5
3	A.N. Time of the Pass	YYYYMMDD time passing A.N. for the pass of #1	8	6
4	blank	0x20 (delimiter)	1	14
5	Path Number of the Pass	PP path number of the pass #1	5	15
6	blank	0x20 (delimiter)	1	20
7	Start Date of the Data (UTC)	YYYYMMDD hh:mm:ss.ttt	21	21
8	blank	0x20 (delimiter)	1	42
9	Stop Date of the Data (UTC)	YYYYMMDD hh:mm:ss.ttt see Note	21	43
10	blank	0x20 (delimiter)	1	64
11	SC Counter Period (sec)	sn.nnnnnnnnnn	13	65
12	blank	0x20 (delimiter)	1	78
13	Reference Counter of SC Clock	NNNNNNNNNNNN	11	79
14	blank	0x20 (delimiter)	1	90
15	Reference Ground Time	YYYYMMDD hh:mm:ss.ttt	21	91
16	Record End	0x0A	1	112
合計			113	

Note:

When the latest time-difference data are included in the record, '99999999 99:99:99.999' is set in field #9.

Ground time(UTC) can be calculated from the clock counter by the following equation;

(This is the same as in ADEOS. Some portion could be changed in ADEOS-II)

$$\text{Ground Time(UTC)} = P_{SC} \times (T_{SC} - T_{ref}) + T_{gref}$$

where

P_{SC} : SC Counter Period

T_{SC} : SC Clock Counter (LSB:2⁰ sec unit)

$$T_{SC} = T_{SC}' / 32$$

T_{SC}' : SC Clock Counter (LSB:2⁻⁵ no unit)

The value of 2⁻¹ to 2⁻⁵ is always 0 in this definition.

T_{ref} : Reference Counter of SC Clock

T_{gref} : Reference Ground Time

STAD is a common use file prepared by MMO to inform all agencies of the status of ADEOS-2 flight segment (orbit maneuvering schedule and results, spacecraft emergency (preliminary report), etc.) and the status of the ADEOS-2 ground segment (maintenance, anomaly, etc.). MMO prepares STAD before 9:00 on Wednesday 1 day before the scheduled maneuver. Anomalous status is reported as needed.

1. File Structure

Table 1. File Structure	record number
STAD Header Record	1
STAD Descriptor Record	2
Data Record 1: s/c Maneuver Schedule 1	3
⋮	
Data Record n: s/c Maneuver Schedule n	n+2
Data Record n+1: Satellite Status	n+3
Data Record n+2: Ground System Status	n+4

Notes: All fields are described in ASCII character code.

2. Record Structure

Table 1. STAD Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	STADnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO'(fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '*****'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date (UTC)	YYYYMMDD	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time (UTC)	hh:mm:ss	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 256' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of maneuver schedules and status reports	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Report (UTC)	YYYYMMDD	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Report (UTC)	YYYYMMDD	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date,UTC)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Notes: Field #15 'Number of Data Records' doesn't include the Descriptor Record.

Table 2. STAD Descriptor Record

No.	Field	Contents Description	Bytes	Byte #
1	Number of the Data Records	NN number of the data records in STAD	2	0
2	blank	0x20 (delimiter)	1	2
3	Number of Maneuver Schedule	NN number of the records of maneuver schedule	2	3
4	blank	0x20 (delimiter)	1	5
5	Record Number of Satellite Status	NN record number of satellite status '*': when STAD doesn't contain the records	2	6
6	blank	0x20 (delimiter)	1	8
7	Record Number of Ground Station Status	NN record number of ground station status '*': when STAD doesn't contain the records	2	9
8	Record End	0x0A	1	11
Sum			12	

Table 3. STAD Data Record (s/c maneuver schedule)

No.	Field	Contents Description	Bytes	Byte #
1	Begin Date of Maneuver(UTC)	YYYYMMDD hh:mm:ss date and time	17	0
2	blank	0x20 (delimiter)	1	17
3	End Date of Maneuver(UTC)	YYYYMMDD hh:mm:ss date and time	17	18
4	blank	0x20 (delimiter)	1	35
5	Start RSP of Maneuver	PPPPP AAA.AA	12	36
6	blank	0x20 (delimiter)	1	48
7	Stop RSP of Maneuver	PPPPP AAA.AA	12	49
8	blank	0x20 (delimiter)	1	61
9	plan/result	X 'P': plan (1 day before)	1	62
10	blank	0x20 (delimiter)	1	63
11	Maneuver Type	XXX +dV, -dV, dl	3	64
12	Reserved	all blank space(0x20)	188	67
13	Record End	0x0A	1	255
Sum			256	

Table 4. STAD Data Record (satellite status)

No.	Field	Contents Description	Bytes	Byte #
1	Comments	status of ADEOS-2 and instruments is reported.	255	0
2	Record End	0x0A	1	255
Sum			256	

Table 5. STAD Data Record (ground station status)

No.	Field	Contents Description	Bytes	Byte #
1	Comments	status of the ground stations (EOC, ASF, WFF, KRNS) is reported.	255	0
2	Record End	0x0A	1	255
Sum			256	

REQR is an individual use file prepared by MMO to inform the NASA and Kiruna stations of ADEOS-II raw data acquisition plans for a week. MMO prepares REQR before 8:00 UTC on Thursday 3 weeks before the target week. It contains paths of data acquisition and designations of X band transmitter/acquisition modes. If there are any problems using these paths, the NASA and Kiruna stations will promptly inform MMO by STGS. In this case, MMO prepares the next version of REQR before 8:00 UTC on Monday 2 weeks before the target week to finalize the coordination between MMO and the NASA and Kiruna stations.

1. File Structure

Table 1. File Structure

REQR Header Record
Data Record 1: Raw Data Record Plan 1
Data Record 2: Raw Data Record Plan 2
:
:
Data Record n: Raw Data Record Plan n

Note: 1. All fields are described in ASCII character code.

2. See Table 3-2 for REQR data coverage

2. Record Structure

Table 1. REQR Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	REQRnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Overseas Station Code (to)	XXXX 'ASF' : Alaska SAR Facility 'WFF' : Wallops Flight Facility 'KRNS': Kiruna station	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 71'	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of raw data record plans	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Request	YYYYMMDD date(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Request	YYYYMMDD date(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 2. REQR Data Record

No.	Field	Contents Description	Bytes	Byte #
1	Begin Date of Downlink Path	YYYYMMDD hh:mm:ss date and time(UTC)	17	0
2	blank	0x20 (delimiter)	1	17
3	End Date of Downlink Path	YYYYMMDD hh:mm:ss date and time(UTC)	17	18
4	blank	0x20 (delimiter)	1	35
5	Begin RSP of Downlink Path	PPPPP AAA.AA argument of latitude is in degree.	12	36
6	blank	0x20 (delimiter)	1	48
7	End RSP of Downlink Path	PPPPP AAA.AA argument of latitude is in degree.	12	49
8	blank	0x20 (delimiter)	1	61
9	X Band	XX 'X1': X1 band 'X3': X3 band	2	62
10	blank	0x20 (delimiter)	1	64
11	Acquisition Mode	NNNNN '0': no data '1' : one downlink segment	5	65
12	Record End	0x0A	1	70
Sum			71	

OPLN is an individual use file prepared by MMO to inform each agencies of ADEOS-II operation plan in response to the target week part of REQQ which each agency submitted. Nine OPLN files are generated simultaneously, and they are tailored to each sensors, AMSR, GLI, ILAS-II, SeaWinds, POLDER, DCS, TEDA, VMS and DMS. MMO will prepare OPLN before 8:00 UTC on Thursday before the target week. OPLN covers 7 days of operation plan from the first path after 0:00 UTC on Tuesday to the last path including 24:00 UTC on the next Monday.

1. File Structure

Table 1. File Structure

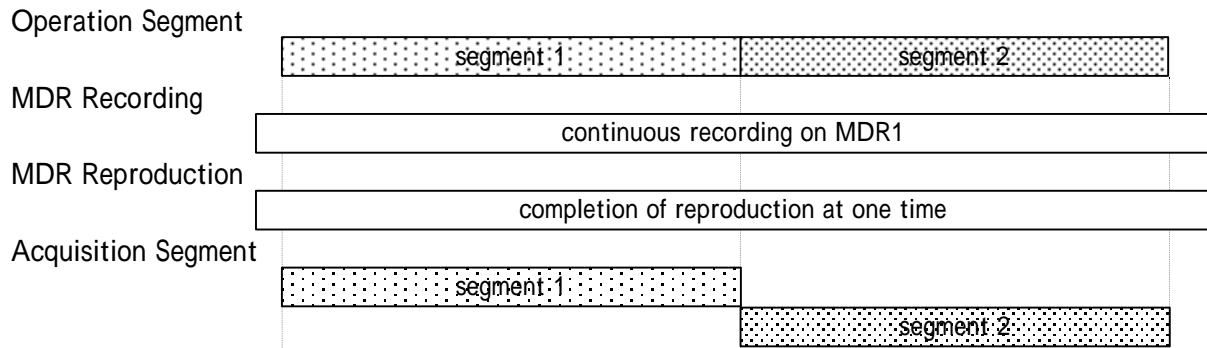
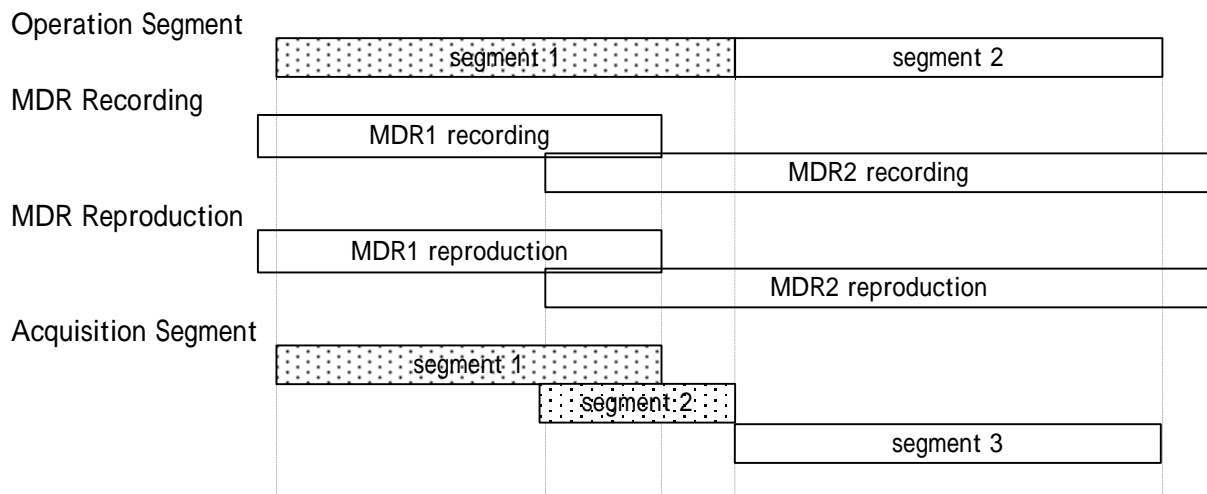
OPLN File Header		
Data Records	Operation Segment	#1
	Acquisition Segment	#1
	Acquisition Segment	#2
	Acquisition Segment	#l
	Operation Segment	#2
	Acquisition Segment	#1
	Acquisition Segment	#2
	Acquisition Segment	#m
	Operation Segment	#K
	Acquisition Segment	#1
	Acquisition Segment	#2
	Acquisition Segment	#n

Notes:

1. In the above drawing, l, m and n are generally different.
2. Each "Acquisition Segment" record contains both of the downlink and acquisition segments information.
3. See Table 3-2 for OPLN data coverage

Supplemental explanation

1) Supposed the following operation pattern;

Example 1Example 2

2) File structure becomes as follows;

Example 1 Operation

Information of Operation Segment 1
Information of Acquisition Segment 1 and Downlink Segment by MDR1
Information of Operation Segment 2
Information of Acquisition Segment 2 and Downlink Segment by MDR1

Example 1 Operation

Information of Operation Segment 1
Information of Acquisition Segment 1 and Downlink Segment by MDR1
Information of Acquisition Segment 2 and Downlink Segment by MDR2
Information of Operation Segment 2
Information of Acquisition Segment 3 and Downlink Segment by MDR2

2. Record Structure

Table 2. OPLN Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	OPLNxxxxnnn OPLN: symbol of OPLN file xxx : specifying sensor GL1: GLI1km GL2: GLI250m AMS: AMSR SEA: SeaWinds POL: POLDER IL2: ILAS-II TED: TEDA DCS: DCS VMS: VMS DMS: DMS nnn : sequential number (001 to 999)	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Agency Code (to)	XXXX '*****'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN '*****'(fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data(UTC)	YYYYMMDD beginning of acq. seq. of the 1st record	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data(UTC)	YYYYMMDD end of acq. seq. of the last record	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. OPLN Data Record (AMSR Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NAMSdddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'AMS'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'ASD': ascending observation 'DSD': descending observation	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of ASD/DSD operation	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of ASD/DSD operation	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to#7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to#9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Note AMSR will be operated in a given mode all the time after initial checkout. Then, its operation segment is determined according to the definition of "scene", i.e., from the north to the south poles(descending orbit), and vice versa.

Table 4. OPLN Data Record (GLI Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	Nxxxxdddsss xxx='GL1': GLI 1km ='GL2': GLI 250m	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'GLI'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	GLI 1km/250m Notification	XXX '1KM': GLI 1km '250': GLI 250m	3	16
6	blank	0x20 (delimiter)	1	19
7	Operation Mode	XXX 'OBD': Observation(day side) 'OBN': Observation(night side) 'SCA': Solar Calibration 'LC1': Lamp Calibration 1 'LC2': Lamp Calibration 2 'EC1': Electrical Calibration 1 'EC2': Electrical Calibration 2	3	20
8	blank	0x20 (delimiter)	1	23
9	Tilt Operation	N '1': Nadir '2': Backward '3': Forward	1	24
10	blank	0x20 (delimiter)	1	25
11	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of operation segment	12	26
12	blank	0x20 (delimiter)	1	38
13	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of operation segment	12	39
14	blank	0x20 (delimiter)	1	51
15	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to #11	5	52
16	blank	0x20 (delimiter)	1	57
17	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to #13	5	58
18	blank	0x20 (delimiter)	1	63
19	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	64
20	blank	0x20 (delimiter)	1	81
21	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	82
22	blank	0x20 (delimiter)	1	99
23	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	100
24	blank	0x20 (delimiter)	1	105
25	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	106
26	Record End	0x0A	1	111
Sum			112	

Table 5. OPLN Data Record (ILAS-II Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NIL2ddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'IL2'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'SRE': Sun-Rise Event 'SSE': Sun-Set Event	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of SRE/SSE operation	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of SRE/SSE operation	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to#7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to#9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Table 6. OPLN Data Record (POLDER Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NPOLddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'POL'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'OBS'(fixed)	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of OBS operation	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of OBS operation	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to#7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to#9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Table 7. OPLN Data Record (SeaWinds Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NSEAddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'SEA'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'WOM': Wind Observation Mode 'ROM': Receive Only Mode 'CAL': Continuous Calibration Mode 'CDS': CDS reset 'MC1': MACRO1 'MC2': MACRO2 'MC3': MACRO3 'CNT': continue same mode at A.N.	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of operation segment	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of operation segment	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to#7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to#9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Note: SeaWinds will be operated in a given mode longer than the orbital period. Then, its operation segment is determined for each path so that its length doesn't exceed a path. At such a path "CNT" is set in the field #5 "Operation Mode".

Table 8. OPLN Data Record (TEDA Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NTEDddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'TED'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'OBS'(fixed)	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of OBS operation	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of OBS operation	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to #7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to #9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Note: TEDA will be operated in a given mode all the time after initial checkout. Then, its operation segment is determined according to the ascending node.

Table 9. OPLN Data Record (DCS Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NDCSdddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'DCS'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'OBS'(fixed)	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of OBS operation	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of OBS operation	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to #7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to #9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

Note: DCS will be operated in a given mode all the time after initial checkout. Then, its operation segment is determined according to the ascending node.

Table 10. OPLN Data Record (VMS Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NVMSdddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'VMS'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'REP': reproduction from VMS to MDR	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of operation segment	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of operation segment	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to #7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to #9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
			Sum	106

Table 11. OPLN Data Record (DMS Operation Information)

No.	Field	Contents Description	Byte	Byte #
1	Operation Segment Number	NDMSdddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Sensor Name	XXX 'DMS'(fixed)	3	12
4	blank	0x20 (delimiter)	1	15
5	Operation Mode	XXX 'ACC': Accelerator 'ASC': Accelerator + Star Tracker 'STT': Accelerator + Star Tracker + Image 'CNT': continue the same mode at A.N.	3	16
6	blank	0x20 (delimiter)	1	19
7	Start RSP of Operation Segment	PPPPP AAA.AA start RSP of operation segment	12	20
8	blank	0x20 (delimiter)	1	32
9	Stop RSP of Operation Segment	PPPPP AAA.AA stop RSP of operation segment	12	33
10	blank	0x20 (delimiter)	1	45
11	Orbit Total Number for the Start of Operation	NNNNN orbit total number corresponding to #7	5	46
12	blank	0x20 (delimiter)	1	51
13	Orbit Total Number for the Stop of Operation	NNNNN orbit total number corresponding to #9	5	52
14	blank	0x20 (delimiter)	1	57
15	Begin Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	58
16	blank	0x20 (delimiter)	1	75
17	End Date of the Operation Segment(UTC)	YYYYMMDD hh:mm:ss	17	76
18	blank	0x20 (delimiter)	1	93
19	Time from A.N. for the Start of Operation Segment(sec)	NNNNN	5	94
20	blank	0x20 (delimiter)	1	99
21	Time from A.N. for the Stop of Operation Segment(sec)	NNNNN	5	100
22	Record End	0x0A	1	105
Sum			106	

DMS L0 data should be divided into 2 files ; a file for DMS-1 and another for DMS-2.

However, we can set "DMS" operation only, because ADEOS-II can't accept DMS-1 and DMS-2 commands separately. Only DMS command can be received.

Table 12. OPLN Data Record(Acquisition Information)(1/2)

No.	Field	Contents Description	Byte	Byte #
1	Acquisition Segment Number	Sxxxxdddsss xxx='GL1': GLI 1km 'GL2': GLI 250m 'AMS': AMSR 'POL': POLDER 'IL2': ILAS-II 'SEA': SeaWinds 'TED': TEDA 'DCS': DCS 'VMS': VMS 'DMS': DMS	11	0
2	blank	0x20 (delimiter)	1	11
3	Downlink Path Number	P d d d d n n s s s s	11	12
4	blank	0x20 (delimiter)	1	23
5	Downlink Segment Number	D x x x d d d s s s - z z	14	24
6	blank	0x20 (delimiter)	1	38
7	Start RSP of Acquisition Segment	PPPPP AAA.AA RSP at the start of acquisition segment	12	39
8	blank	0x20 (delimiter)	1	51
9	Stop RSP of Acquisition Segment	PPPPP AAA.AA RSP at the stop of acquisition segment	12	52
10	blank	0x20 (delimiter)	1	64
11	Time from AN for the Start of Acquisition Segment(sec)	NNNNN Time is measured from the ascending node.	5	65
12	blank	0x20 (delimiter)	1	70
13	Time from AN for the Stop of Acquisition Segment(sec)	NNNNN Time is measured from the ascending node.	5	71
14	blank	0x20 (delimiter)	1	76
15	Start of the Acquisition Segment (observation time in UTC)	YYYYMMDD hh:mm:ss absolute time based on predicted orbit data	17	77
16	blank	0x20 (delimiter)	1	94
17	Stop of the Acquisition Segment (observation time in UTC)	YYYYMMDD hh:mm:ss absolute time based on predicted orbit data	17	95
18	blank	0x20 (delimiter)	1	112
19	Start RSP of Downlink Segment	PPPPP AAA.AA RSP at the start of downlink segment	12	113
20	blank	0x20 (delimiter)	1	125
21	Stop RSP of Downlink Segment	PPPPP AAA.AA RSP at the stop of downlink segment	12	126
22	blank	0x20 (delimiter)	1	138

Table 12. OPLN Data Record(Acquisition Information)(2/2)

No.	Field	Contents Description	Byte	Byte #
23	Time from A.N. for the Start of Downlink Segment(sec)	NNNNN Time is measured from the ascending node.	5	139
24	blank	0x20 (delimiter)	1	144
25	Time from A.N. for the Stop of Downlink Segment(sec)	NNNNN Time is measured from the ascending node.	5	145
26	blank	0x20 (delimiter)	1	150
27	Begin Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss absolute time for the start of downlink seg.	17	151
28	blank	0x20 (delimiter)	1	168
29	End Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss absolute time for the stop of downlink seg.	17	169
30	blank	0x20 (delimiter)	1	186
31	Acquisition Frequency Band	XXX 'X1 ': X1 band 'X3 ': X3 band 'QCH': Qch band 'ICH': Ich band	3	187
32	blank	0x20 (delimiter)	1	190
33	Acquisition Mode	XXX 'GLI' : real-time GLI250m data 'MDR' : MDR reproduction of multiple data 'ODM' : ODR reproduction of multiple data 'ODR' : ODR reproduction of GLI250m data 'MRT' : multiple real-time data capture	3	191
34	blank	0x20 (delimiter)	1	194
35	Station Code	XXXX 'HEOC': NASDA/EOC(Hatoyama) 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station 'REDU': Redu station	4	195
36	blank	0x20 (delimiter)	1	199
37	Assigned IOCS	NNNNNN 'DRTS-E': via DRTS-E 'DRTS-W': via DRTS-W 'ARTEMIS': via ARTEMIS 'DIRECT': Direct Acquisition by DT-X	6	200
38	Record End	0x0A	1	206
Sum			207	

SHAQ is an individual use file prepared by MMO to inform the NASA and Kiruna stations of ADEOS-II direct(X-band) acquisition schedule, which are prepared before 8:00 UTC on Thursday before the target week.

SHAQ covers 7 days of acquisition plan from the first path after 0:00 UTC on Wednesday to the last path including 24:00 UTC on the next Tuesday.

1. File Structure

Table 1. File Structure

Overseas SHAQ Header Record
Data Record 1: Downlink Seg. Information 1
Data Record 2: Downlink Seg. Information 2
Data Record 3: Downlink Seg. Information 3
Data Record N: Downlink Seg. Information N

Note:

1. Each data records are sorted by the "Begin Date of Downlink Segment".
2. See Table 3-2 for SHAQ data coverage

2. Record Structure

Table 2. SHAQ Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	S H A Q n n n n n n nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Overseas Station Code (to)	XXXX 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 181'(fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of downlink segments	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD begin date of acquisition of the 1st record(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD end date of acquisition of the last record(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. SHAQ data Record(1/2)

No.	Field	Contents Description	Byte	Byte #
1	Satellite Name	ADEOS2 (fixed)	6	0
2	blank	0x20 (delimiter)	1	6
3	Downlink Path Number	P d d d d n n s s s s	11	7
4	blank	0x20 (delimiter)	1	18
5	Downlink Segment Number	Dxxxxdddsss-zz	14	19
6	blank	0x20 (delimiter)	1	33
7	X-band AOS in UTC	YYYYMMDD hh:mm:ss.ttt predicted time of AOS	21	34
8	blank	0x20 (delimiter)	1	55
9	X-band LOS in UTC	YYYYMMDD hh:mm:ss.ttt predicted time of LOS	21	56
10	blank	0x20 (delimiter)	1	77
11	Number of Downlink Segments	NN number of downlink segments in the path	2	78
12	blank	0x20 (delimiter)	1	80
13	Acquisition Frequency Band	XXX 'X1 ' : X1 band 'X3 ' : X3 band	3	81
14	blank	0x20 (delimiter)	1	84
15	Begin Date of Downlink Path (UTC)	YYYYMMDD hh:mm:ss.ttt	21	85
16	blank	0x20 (delimiter)	1	106
17	End Date of Downlink Path (UTC)	YYYYMMDD hh:mm:ss.ttt	21	107
18	blank	0x20 (delimiter)	1	128
19	Acquisition Mode	XXX 'GLI' : real-time GLI250m data 'MDR' : MDR reproduction of multiple data 'ODM' : ODR reproduction of multiple data 'ODR' : ODR reproduction of GLI250m data 'MRT' : multiple real-time data capture	3	129
20	blank	0x20 (delimiter)	1	132
21	Station Code (X-band)	XXXX 'ASF ' : Alaska SAR Facility 'WFF ' : Wallops Flight Facility 'KRNS' : Kiruna station	4	133
22	blank	0x20 (delimiter)	1	137
23	Assigned IOCS(EOC only)	DIRECT (fixed)	6	138
24	blank	0x20 (delimiter)	1	144

Table 3. SHAQ data Record(2/2)

No.	Field	Contents Description	Byte	Byte #
25	Begin Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss beginning date of the downlink segment	17	145
26	blank	0x20 (delimiter)	1	162
27	End Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss end date of the downlink segment	17	163
28	Record End	0x0A	1	180
Sum			181	

Notes: One data record corresponds to one downlink segment.

The fields #1-24 remain constant for the same downlink path except for #5 and #19 fields.

The field #5 changes the value of "zz" sequentially in an ascending order of "Begin Date of Downlink Segment".

LV0P is an individual use file prepared by MMO to inform the NASA and Kiruna stations of level 0 processing information of ADEOS-II mission data. MMO will prepare LV0P before 8:00 UTC on Monday, Wednesday, and Friday in the same schedule of the orbital data (ELMP and ELMD) updates.

1. File Structure

Table 1. File Structure

Overseas LV0P Header Record
Data record 1: Level 0 Processing Information 1
Data record 2: Level 0 Processing Information 2
Data record 3: Level 0 Processing Information 3
Data record N: Level 0 Processing Information N

Note:

1. Each data records are sorted by the "Begin Date of Downlink Segment".

2. LV0P delivery and its data coverage are as follows,

delivery	coverage
Monday	Wednesday and Thursday Downlink 2 days
Wednesday	Friday and Saturday Downlink 2 days
Friday	Sunday, Monday, and Tuesday Downlink 3 days

3. See Table 3-2 for LV0P data coverage

2. Record Structure

Table 3. LV0P Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	L V 0 P n n n n n n n n n n n n : file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Overseas Station Code (to)	XXXX 'ASF' : Alaska SAR Facility 'WFF' : Wallops Flight Facility 'KRNS': Kiruna station	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 149'	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of L0 processing plans	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data to be Processed (UTC)	YYYYMMDD Date of the acquisition start at the 1st record	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data to be Processed (UTC)	YYYYMMDD Date of the acquisition end at the last record	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 4. LV0P data Record(1/2)

No.	Field	Contents Description	Byte	Byte #
1	Downlink Path Number	P d d d d n n s s s s	11	0
2	blank	0x20 (delimiter)	1	11
3	Downlink Segment Number	D x x x d d d s s s - z z	14	12
4	blank	0x20 (delimiter)	1	26
5	Start RSP of Downlink Segment	PPPPP AAA.AA RSP at the start of downlink segment	12	27
6	blank	0x20 (delimiter)	1	39
7	Stop RSP of Downlink Segment	PPPPP AAA.AA RSP at the stop of downlink segment	12	40
8	blank	0x20 (delimiter)	1	52
9	Time from A.N. for the Start of Downlink Segment(sec)	NNNNN Time is measured from the ascending node.	5	53
10	blank	0x20 (delimiter)	1	58
11	Time from A.N. for the Stop of Downlink Segment(sec)	NNNNN Time is measured from the ascending node.	5	59
12	blank	0x20 (delimiter)	1	64
13	Begin Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss absolute time for the start of downlink seg.	17	65
14	blank	0x20 (delimiter)	1	82
15	End Date of Downlink Segment (UTC)	YYYYMMDD hh:mm:ss absolute time for the stop of downlink seg.	17	83
16	blank	0x20 (delimiter)	1	100
17	Acquisition Frequency Band	XXX 'X1 ' : X1 band 'X3 ' : X3 band	3	101
18	blank	0x20 (delimiter)	1	104
19	Acquisition Mode	XXX 'GLI' : real-time GLI250m data 'MDR' : MDR reproduction of multiple data 'ODM' : ODR reproduction of multiple data 'ODR' : ODR reproduction of GLI250m data 'MRT' : multiple real-time data capture	3	105
20	blank	0x20 (delimiter)	1	108
21	Station Code	X X X X 'ASF ' : Alaska SAR Facility 'WFF ' : Wallops Flight Facility 'KRNS' : Kiruna station	4	109
22	blank	0x20 (delimiter)	1	113
23	Assigned IOCS	N N N N N N 'DIRECT'(fixed) IOCS name is set here especially for EOC.	6	114
24	blank	0x20 (delimiter)	1	120
25	Orbit Total Number for the Path	N N N N N	5	121
26	blank	0x20 (delimiter)	1	126

Table 4. LV0P data Record(2/2)

No.	Field	Contents Description	Byte	Byte #
27	GLI 1km Processing Class	N '0': No Data '4': raw data delivery '5': Level 0 processing and raw data delivery	1	127
28	blank	0x20 (delimiter)	1	128
29	AMSR Processing Class	N '0': No Data '1': only sensor data	1	129
30	blank	0x20 (delimiter)	1	130
31	DCS Processing Class	N '0': No Data '1': only sensor data	1	131
32	blank	0x20 (delimiter)	1	132
33	SeaWinds Processing Class	N '0': No Data '1': only sensor data	1	133
34	blank	0x20 (delimiter)	1	134
35	TEDA Processing Class	N '0': No Data '1': only sensor data	1	135
36	blank	0x20 (delimiter)	1	136
37	ILAS-2 Processing Class	N '0': No Data '1': only sensor data	1	137
38	blank	0x20 (delimiter)	1	138
39	POLDER Processing Class	N '0': No Data '4': raw data delivery	1	139
40	blank	0x20 (delimiter)	1	140
41	GLI 250m Processing Class	N '0': No Data '4': raw data delivery	1	141
42	blank	0x20 (delimiter)	1	142
43	VMS Processing Class	N '0': No Data '1': only sensor data	1	143
44	blank	0x20 (delimiter)	1	144
45	DMS Processing Class	N '0': No Data '1': only sensor data	1	145
46	blank	0x20 (delimiter)	1	146
47	Necessity of HKTL M Processing	N '0': not necessary '1': generate HKTL M source packet	1	147
48	Record End	0x0A	1	148
Sum			149	

Roles of Each Stations

Table 2. Level 0 Processing Matrix

Station	Input Data	Level 0 Data Class	Mode 1 Operation	Mode 2 Operation	Notes
EOC	EOC processes all level 0 data both for the mode 1 and 2 operations. (GLI1km/GLI250m/AMSR/SeaWinds/ILAS-2/POLDER/DCS/TEDA/VMS/DMS/Individual HKTLM/MRT) (Individual HKTLM data don't include GLI1km and AMSR.)				
NASA Stations (ASF and WFF)	GLI250m RAW data tape	GLI-250m level 0 product	RAW tape to EOC	RAW tape to EOC	RAW tape to EOC : L0 processing by EOC online delivery to EOC : "Retry procedure" will be performed when data errors occur. online delivery to SeaPAC :NASA stations process raw data to level0 and send them directly to SeaPAC via network. EOC doesn't process them again.
		AMSR level 0 product	N/A	online delivery to EOC	
	MDR RAW data tape	GLI-1km level 0 product	N/A	RAW tape to EOC	
		SeaWinds level 0 product	N/A	online delivery to SeaPAC	
		ILAS-II level 0 product	N/A	online delivery to EOC	
		POLDER level 0 product	N/A	RAW tape to EOC	
		TEDA level 0 product	N/A	online delivery to EOC	
		DCS level 0 product	N/A	online delivery to EOC	
		VMS level 0 product	N/A	online delivery to EOC	
		DMS-1 level 0 product	N/A	online delivery to EOC	
		DMS-2 level 0 product	N/A	online delivery to EOC	
	ODR RAW data tape	GLI-250m level 0 product	N/A	RAW tape to EOC	
	MRT real	DCS level 0 product (regional)	online delivery to EOC	online delivery to EOC	
		VMS level 0 product	online delivery to EOC	online delivery to EOC	
		DMS-1 level 0 product	online delivery to EOC	online delivery to EOC	
		DMS-2 level 0 product	online delivery to EOC	online delivery to EOC	
Kiruna Station	GLI250m RAW data tape	GLI-250m level 0 product	RAW tape to EOC	RAW tape to EOC	In order to process GLI1km selected data (level0), each stations use RTIG file, NASA data: RTIG sent to ASF, WFF, and NOAA, Kiruna data: RTIG sent to Kiruna.
		AMSR level 0 product	N/A	online delivery to EOC	
	MDR RAW data tape	GLI-1km level 0 product	N/A	RAW tape to EOC	
		SeaWinds level 0 product	N/A	online delivery to EOC	
		ILAS-II level 0 product	N/A	online delivery to EOC	
		POLDER level 0 product	N/A	RAW tape to EOC	
		TEDA level 0 product	N/A	online delivery to EOC	
		DCS level 0 product	N/A	online delivery to EOC	
		VMS level 0 product	N/A	online delivery to EOC	
		DMS-1 level 0 product	N/A	online delivery to EOC	
		DMS-2 level 0 product	N/A	online delivery to EOC	
	ODR RAW data tape	GLI-250m level 0 product	N/A	RAW tape to EOC	
	MRT real	DCS level 0 product (regional)	online delivery to EOC	online delivery to EOC	
		VMS level 0 product *1	online delivery to EOC	online delivery to EOC	
		DMS-1 level 0 product *1	online delivery to EOC	online delivery to EOC	
		DMS-2 level 0 product *1	online delivery to EOC	online delivery to EOC	

*1 VMS, DMS-1 and DMS-2 L0 product is transferred to EOC if required.

How the "L0 Processing Class" is defined:

Each sensor's "L0 Processing Class" in LV0P is set following matrix bellow.

Table 5. Sensor L0 Processing Matrix

Station	Acq. Mode	L0 Processing Class												Notes
		GLI250m	GLI1km	AMSR	DCS	SeaWinds	ILAS-2	POLDER	TEDA	VMS	DMS-1	DMS-2	HKTLM	
EOC	GLI	S	--	--	--	--	--	--	--	--	--	--	--	
	ODR	S	--	--	--	--	--	--	--	--	--	--	--	
	MDR	--	S	S	S+H	S+H	S+H	S+H	S+H	S+H	S+H	S+H	--	
	ODM	--	S	S	S+H	S+H	S+H	S+H	S+H	S+H	S+H	S+H	--	
	MRT (regular)	--	--	--	S+H	--	--	--	--	--	--	--	--	
Overseas	GLI	R	--	--	--	--	--	--	--	--	--	--	--	
	ODR	R	--	--	--	--	--	--	--	--	--	--	--	
	MDR	--	R	S	S	S	S	R	S	S	S	S	SRC-HK	
	ODM	--	R	S	S	S	S	R	S	S	S	S	SRC-HK	
	MRT (NGN)	--	--	--	S	--	--	--	--	S	S	S	--	
	MRT(KRNS)	--	--	--	S	--	--	--	--	S *1	S *1	S *1	--	

Notations:

'--': N/A

'S+H': sensor and HKTLM

'SRC-HL': generate HKTLM source packet

'R': send RAW data tape to EOC

*1 VMS, DMS-1 and DMS-2 L0 product is transferred to EOC if required.

RTIG is an individual use file prepared by MMO to inform the NASA and Kiruna stations and NOAA of ADEOS-II GLI 1km data acquisition plan based on the NOAA CoastWatch Program. MMO prepares RTIG at 8:00 UTC on Monday, Wednesday and Friday in the same schedule of the orbital data(ELMP and ELMD) updates. In case that a due date is a NASDA's holiday, RTIG preparation schedule follows that of the orbital data.

1. File Structure

Table 1. File Structure

RTIG Header Record
Data Record 1: Selection Information 1
Data Record 2: Selection Information 2
Data Record 3: Selection Information 3
Data Record N: Selection Information N

Note:

1. Each data records are divided by both of the NOAA selected region and the acquisition segment.
2. RTIG delivery and its coverage follow LV0P convention.
3. 1 file contains 1 operation segment.
4. RTIG contains operation segment information at descending orbit of ADEOS-II.

2. Record Structure

Table 2. RTIG Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	RTIGnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Overseas Station Code (to)	XXXX 'ASF': Alaska SAR Facility 'WFF': Wallops Flight Facility 'NOAA': NOAA/NESDIS 'KRNS': Kiruna Station	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN '168': (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Request	YYYYMMDD date(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Request	YYYYMMDD date(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. RTIG Data Record (1/2)

No.	Field	Contents Description	Bytes	Byte #
1	Operation Plan Number	NGL1ddddsss	11	0
2	blank	0x20 (delimiter)	1	11
3	Acquisition Segment Number	SGL1ddddsss	11	12
4	blank	0x20 (delimiter)	1	23
5	Downlink Path Number	P d d d d n n s s s s	11	24
6	blank	0x20 (delimiter)	1	35
7	Downlink Segment Number	D x x x d d d s s s - z z	14	36
8	blank	0x20 (delimiter)	1	50
9	Start RSP of the Selected Data	PPPPP AAA.AA	12	51
10	blank	0x20 (delimiter)	1	63
11	Stop RSP of the Selected Data	PPPPP AAA.AA	12	64
12	blank	0x20 (delimiter)	1	76
13	Begin Date of the Selected Data	YYYYMMDD hh:mm:ss	17	77
14	blank	0x20 (delimiter)	1	94
15	End Date of the Selected Data	YYYYMMDD hh:mm:ss	17	95
16	blank	0x20 (delimiter)	1	112
17	Spacecraft Time Counter(start)	NNNNNNNNNNNN sc time counter extrapolated from time difference data	11	113
18	blank	0x20 (delimiter)	1	124
19	Spacecraft Time Counter(stop)	NNNNNNNNNNNN sc time counter extrapolated from time difference data	11	125
20	blank	0x20 (delimiter)	1	136
21	Time from the A.N. for the Start RSP (sec)	NNNNN Time is measured from the ascending node.	5	137
22	blank	0x20 (delimiter)	1	142
23	Time from the A.N. for the Stop RSP (sec)	NNNNN Time is measured from the ascending node.	5	143
24	blank	0x20 (delimiter)	1	148

Table 3. RTIG Data Record (2/2)

No.	Field	Contents Description	Bytes	Byte #
25	ID of the Selected Data	RTIG-PP-NNNNN PP: Path number of Start RSP (field #9) NNNNN: seconds from A.N. (field #21)	13	149
26	blank	0x20 (delimiter)	1	162
27	User Agency Code	NNNN 'NOAA'(fixed)	4	163
28	record end	0x0A	1	167
Sum			168	

Note:

1. "ID of the Selected Data" is assigned when 4-week assessment is completed.
This number is the unique key to identify each selected data-sets.
2. NOAA Selected Regions
 - (1) The NOAA selected regions that are observed in descending orbits are informed by this file.
 - (2) Short gaps between given two regions are ignored, then continuous RSP are set instead of divided small ranges. Threshold of this case is TBD.
3. Definition of Spacecraft Time Counter
 "Spacecraft Time Counter" T_{SC} is derived from PCD Spacecraft Time as follows,

$$T_{SC} = T_{SC}' / 32 \quad \text{LSB: } 2^0, \text{ sec unit}$$
 where T_{SC}' is PCD Spacecraft Time of which LSB is 2^{-5} .
 According to the definition, TSC is a decimal number in the unit of second whose range is [0, 134217727].

RDRM is an individual use file prepared by MMO to inform the NASA and Kiruna stations of the readability of received cassette D1. MMO prepares RDRM before 6:00 UTC on TBD days after reception of the D1.

1. File Structure

Table 1. File Structure

RDRM Header Record
Data Record 1: Readability Report 1
Data Record 2: Readability Report 2
:
:
Data Record n: Readability Report n

Notes: 1. All fields are described in ASCII character code.
2. One data record is used for one tape.

2. Record Structure

Table 1. RDRM Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	RDRMnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	EOC MMO Code (from)	XXXX 'HMMO'(fixed)	4	18
6	blank	0x20 (delimiter)	1	22
7	Overseas Station Code (to)	XXXX 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna Station	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 23' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of tapes to be sent	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD '*****' (fixed)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD '*****' (fixed)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 2. RDRM Data Record

No.	Field	Contents Description	Bytes	Byte #
1	Date of Evaluation	YYYYMMDD date(UTC)	8	0
2	blank	0x20 (delimiter)	1	8
3	Tape Number	DSSMnnnnnn SS: 65 ASF 66 WFF 70 KRNS M: 2 Master 3 Backup nnnnnn: 000001 to 899999	10	9
4	blank	0x20 (delimiter)	1	19
5	Readability	XX 'OK': the tape is acceptable. 'NG': the tape is not acceptable.	2	20
6	Record End	0x0A	1	22
Sum			23	

STGS is an individual use file prepared by the NASA and Kiruna stations to inform MMO of the status of each station in response to REQR. The overseas stations place STGS in the designated system before 1:00 UTC on Friday (the next day after receipt of REQR) for EOC retrieval. Coordination between NASDA/EOC and the overseas stations by REQR and STGS are repeated up to two times.

1. File Structure

Table 1. File Structure

STGS Header Record
Data Record 1: Unavailable Path 1
Data Record 2: Unavailable Path 2
:
:
Data Record n: Unavailable Path n

Notes:

1. All fields are described in ASCII character code.
2. See Table 3-2 for STGS data coverage

2. Record Structure

Table 2. STGS Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	STGSnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	Overseas Station Code (from)	XXXX 'WFF ': Wallops Flight Facility 'ASF ': Alaska SAR Facility 'KRNS': Kiruna station	4	18
6	blank	0x20 (delimiter)	1	22
7	EOC MMO Code (to)	XXXX 'HMMO'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 47' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of passes to be reported	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD date(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD date(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. STGS Data Record

No.	Field	Contents Description	Bytes	Byte #
1	Date to Record Data	YYYYMMDD date(UTC)	8	0
2	blank	0x20 (delimiter)	1	8
3	Path Number	PPPPP path number at which data are recorded	5	9
4	blank	0x20 (delimiter)	1	14
5	Station Status	XXX ALL':all RSP ranges at the path(field #3) cannot be used.	3	15
6	blank	0x20 (delimiter)	1	18
7	Reason	X 'A': antenna conflict 'M': scheduled maintenance 'O': others	1	19
8	blank	0x20 (delimiter)	1	20
9	Begin of Available RSP	PPPPP AAA.AA '***** *****' is set when #5 indicates 'ALL' argument of latitude is in degree	12	21
10	blank	0x20 (delimiter)	1	33
11	End of Available RSP	PPPPP AAA.AA '***** *****' is set when #5 indicates 'ALL' argument of latitude is in degree	12	34
12	Record End	0x0A	1	46
Sum			47	

RERC is an individual use file prepared by the Overseas Stations to inform MMO of ADEOS-II direct(X-band) acquisition results, which are responses to SHAQ made by MMO. The overseas stations place RERC in the designated system after each downlink for EOC retrieval.

One RERC file covers one downlink path and contains the detailed results of acquisition and RAW data recording.

When information for backup tape (reserved tape) is reported, the file name is changed to RERB.

1. File Structure

Table 1. File Structure

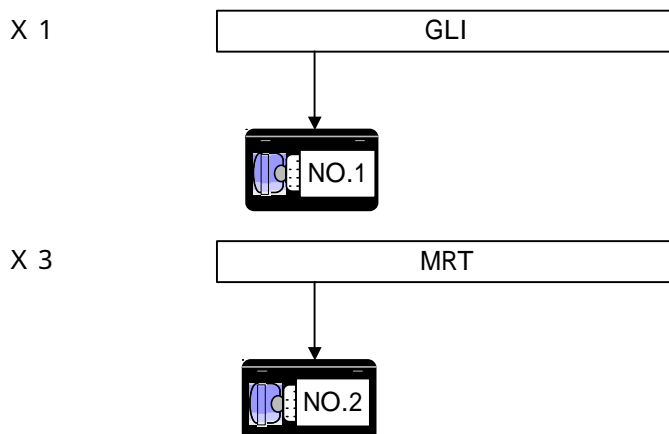
Overseas RERC(RERB) Header Record
Data Record 1: Downlink Seg. Information 1
Data Record 2: Downlink Seg. Information 2
Data Record 3: Downlink Seg. Information 3
Data Record N: Downlink Seg. Information N

Note:

Each data records are sorted by the "Begin Date of Downlink Segment".

RAW data tape is generated as the following rules.

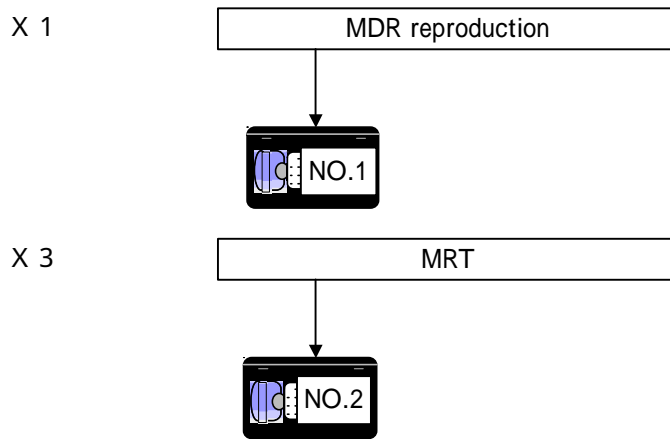
Case 1: Mode 1 Operation;



Tape No.1 contains GLI250m data only.

Tape No.2 contains MRT data only.(EOC and KRNS)

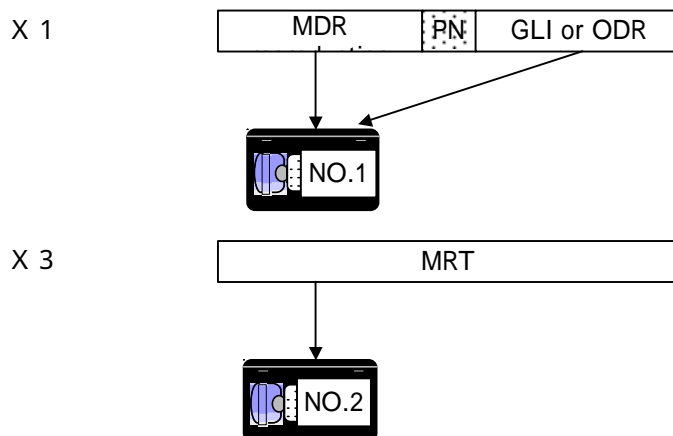
Case 2: Mode 2 Operation(1/4);



Tape No.1 contains MDR data only.

Tape No.2 contains MRT data only. (EOC and KRNS)

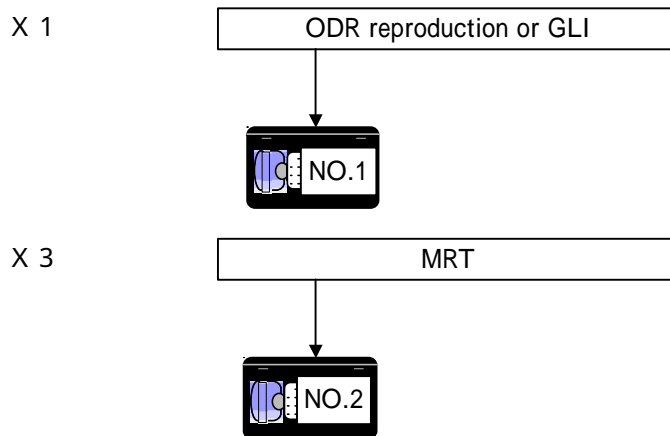
Case 3: Mode 2 Operation(2/4);



Tape No.1 contains both of MDR and GLI250m (or ODR) data.

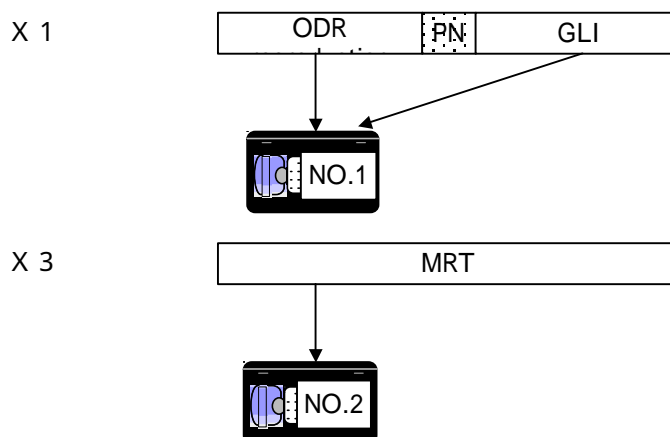
Tape No.2 contains MRT data only. (EOC and KRNS)

Case 4: Mode 2 Operation(3/4);



Tape No.1 contains both of ODR or GLI250m data only.
 Tape No.2 contains MRT data only. (EOC and KRNS)

Case 5: Mode 2 Operation(4/4);



Tape No.1 contains both of ODR and GLI250m data.
 Tape No.2 contains MRT data only. (EOC and KRNS)

The same RAW tape number and related information can be applied to more than one downlink segments.

2. Record Structure

Table 2. RERC Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	RERC n n n n n n for Master tape RERB n n n n n n for Backup tape nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	Overseas Station Code (from)	XXXX 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station	4	18
6	blank	0x20 (delimiter)	1	22
7	EOC MMO Code (to)	XXXX 'HMMO' (fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 130' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNN number of downlink segments	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD begin date of acquisition of the 1st record(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD end date of acquisition of the last record(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. RERC data Record

No.	Field	Contents Description	Byte	Byte #
1	Downlink Path Number	Pddddnnssss	11	0
2	blank	0x20 (delimiter)	1	11
3	Downlink Segment Number	Dxxxdddssss-zz	14	12
4	blank	0x20 (delimiter)	1	26
5	RAW Tape Number	DSSMnnnnnn SS: 65->ASF, 66->WFF, 70->KRNS M: 2->Master Tape, 3->Backup Tape nnnnnn: 000001 to 899999 '*****' for X3 Acquisition	10	27
6	blank	0x20 (delimiter)	1	37
7	Positional ID of Recording Start	NNNNNN '*****' for X3 Acquisition	6	38
8	blank	0x20 (delimiter)	1	44
9	Positional ID of Recording Stop	NNNNNN '*****' for X3 Acquisition	6	45
10	blank	0x20 (delimiter)	1	51
11	Begin Date of Recording(UTC)	YYYYMMDD hh:mm:ss '*****' for X3 Acquisition	17	52
12	blank	0x20 (delimiter)	1	69
13	End Date of Recording(UTC)	YYYYMMDD hh:mm:ss '*****' for X3 Acquisition	17	70
14	blank	0x20 (delimiter)	1	87
15	Lock-On Date(UTC)	YYYYMMDD hh:mm:ss	17	88
16	blank	0x20 (delimiter)	1	105
17	Lock-Off Date(UTC)	YYYYMMDD hh:mm:ss	17	106
18	blank	0x20 (delimiter)	1	123
19	Acquisition Status	N 'G': status 98 % 'P': status < 98 % 'N': No Data	1	124
20	blank	0x20 (delimiter)	1	125
21	Recording Status	NNN status in % '***' for X3 Acquisition	3	126
22	Record End	0x0A	1	129
Sum			130	

L0RL is an individual use file prepared by the NASA and Kiruna stations to inform MMO of level 0 processing results of ADEOS-II mission data in response to LV0P. The NASA and Kiruna stations place LV0P in the designated system after each L0 processing for EOC retrieval.

One L0RL file covers one downlink segment including a corresponding set of the acquisition segment.

1. File Structure

Table 1. File Structure

Overseas L0RL Header Record
Data record 1: Level 0 Processing Result
Data record 2: Level 0 Processing Result 2
Data record 3: Level 0 Processing Result 3
Data record N: Level 0 Processing Result N

Notes:

1. When a level 0 product is sent to two agencies simultaneously, two data records must be set in one file. The number of agencies equals to that of data records.

2. Record Structure

Table 2. L0RL Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	L0RL n n n n n n nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2' (fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	Overseas Station Code (to)	XXXX 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station	4	18
6	blank	0x20 (delimiter)	1	22
7	EOC MMO Code (from)	XXXX 'HMMO' (fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN ' 203' (fixed)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of downlink segments	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD begin date of acquisition of the 1st record(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD end date of acquisition of the last record(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 3. L0RL Data Record (1/2)

No.	Field	Contents Description	Byte	Byte #
1	Downlink Path Number	Pdddnssss	11	0
2	blank	0x20 (delimiter)	1	11
3	Downlink Segment Number	Dxxxxdddsss-zz	14	12
4	blank	0x20 (delimiter)	1	26
5	Station Code(X-band)	NNNN 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna station	4	27
6	blank	0x20 (delimiter)	1	31
7	Processing Information	NNNN 'RECV' (fixed)	4	32
8	blank	0x20 (delimiter)	1	36
9	Classifier of L0 Data	N '1': only sensor data (fixed)	1	37
10	blank	0x20 (delimiter)	1	38
11	Sensor Name	NNN	3	39
12	blank	0x20 (delimiter)	1	42
13	Destination Agency/Station	NNNN 'HEOC' (fixed)	4	43
14	blank	0x20 (delimiter)	1	47
15	Input of L0 Processing	NNNN 'REAL' (fixed)	4	48
16	blank	0x20 (delimiter)	1	52
17	Date of RAW Data Received	YYYYMMDD hh:mm:ss '*****' (fixed)	17	53
18	blank	0x20 (delimiter)	1	70
19	File Name of L0 Product	NNNNNN... file name of L0 product sent via network	39	71
20	blank	0x20 (delimiter)	1	110
21	Date of L0 Processing Completion	YYYYMMDD hh:mm:ss	17	111
22	blank	0x20 (delimiter)	1	128

Table 3. L0RL Data Record (2/2)

No.	Field	Contents Description	Byte	Byte #
23	L0 Processing Result	NNNN 'OK': normally completed 'NG': abnormal end	4	129
24	blank	0x20 (delimiter)	1	133
25	Date of L0 Delivery	YYYYMMDD hh:mm:ss	17	134
26	blank	0x20 (delimiter)	1	151
27	Status of L0 Delivery	NNNNN 'OK': normally completed 'NG': abnormal end	5	152
28	blank	0x20 (delimiter)	1	157
29	Lost Packets	NNNNNNNN	8	158
30	blank	0x20 (delimiter)	1	166
31	Total Packets	NNNNNNNN	8	167
32	blank	0x20 (delimiter)	1	175
33	Lost Major Frames	NNNNNNNN '*****' (fixed)	8	176
34	blank	0x20 (delimiter)	1	184
35	Lost Minor Frames	NNNNNNNN '*****' (fixed)	8	185
36	blank	0x20 (delimiter)	1	193
37	Total Minor Frames	NNNNNNNN '*****' (fixed)	8	194
38	Record End	0x0A	1	202
Sum			203	

SRRM is an individual use file prepared by the NASA and Kiruna stations to inform MMO of the shipmen of a raw data recorded D1 cassette to NASDA/EOC. The NASA stations place SRRM in the designated system before 1:00 on shipment day for EOC retrieval.

1. File Structure

Table 1. File Structure

record number

SRRM Header Record	1
Data Record 1: Shipment Report 1 (tape information 1)	2
Data Record 2: Shipment report 1 (pass information 1)	3
Data Record 3: Shipment Report 1 (pass information 2)	4
:	
Data Record m+1: Shipment Report 1 (pass information m)	m+3
Data Record m+2: Shipment Report 2 (tape information 2)	m+4
Data Record m+3: Shipment Report 2 (pass information 1)	m+5
:	
Data Record m+n+2: Shipment Report 2 (pass information n)	m+n+4
Data Record m+n+3: Shipment Report 3 (tape information 3)	m+n+5
:	
repeat the above pattern	

- Note: 1. All fields are described in ASCII character code.
 2. One 'pass information' record is used for one pass.

2. Record Structure

Table 1. SRRM Header Record

No.	Field	Contents Description	Bytes	Byte #
1	File Name	SRRMnnnnnn nnnnnn: file sequential number	10	0
2	blank	0x20 (delimiter)	1	10
3	Project Name	XXXXXX 'ADEOS2'(fixed)	6	11
4	blank	0x20 (delimiter)	1	17
5	Overseas Station Code (from)	XXXX 'ASF ': Alaska SAR Facility 'WFF ': Wallops Flight Facility 'KRNS': Kiruna Station	4	18
6	blank	0x20 (delimiter)	1	22
7	EOC MMO Code (to)	XXXX 'HMMO'(fixed)	4	23
8	blank	0x20 (delimiter)	1	27
9	File Creation Date	YYYYMMDD date(UTC)	8	28
10	blank	0x20 (delimiter)	1	36
11	File Creation Time	hh:mm:ss time(UTC)	8	37
12	blank	0x20 (delimiter)	1	45
13	Length of Data Record	NNNN '0000' (fixed: dummy value)	4	46
14	blank	0x20 (delimiter)	1	50
15	Number of Data Records	NNNNN number of tapes to be shipped	5	51
16	blank	0x20 (delimiter)	1	56
17	Begin Date of Data	YYYYMMDD date(UTC)	8	57
18	blank	0x20 (delimiter)	1	65
19	End Date of Data	YYYYMMDD date(UTC)	8	66
20	blank	0x20 (delimiter)	1	74
21	File Format Version (date)	YYYYMMDD date when the file format is authorized	8	75
22	blank	0x20 (delimiter)	1	83
23	File Format Version (number)	VNN NN: version number	3	84
24	blank	0x20 (delimiter)	1	87
25	Reserved	all blank space (0x20)	39	88
26	Record End	0x0A	1	127
Sum			128	

Table 2. SRRM Data Record (tape information)

No.	Field	Contents Description	Bytes	Byte #
1	Date Shipped	YYYYMMDD date(UTC)	8	0
2	blank	0x20 (delimiter)	1	8
3	Tape Number	DSSMnnnnnn SS: 65:ASF 66:WFF 70:KRNS M: 2 Master Tape, 3 Backup Tape nnnnnn: 000001 to 899999	10	9
4	blank	0x20 (delimiter)	1	19
5	Number of Passes	NNNNN number of passes used to acquire data	5	20
6	Record End	0x0A	1	25
Sum			26	

Table 3. SRRM Data Record (pass information)

No.	Field	Contents Description	Bytes	Byte #
1	Date of data Acquisition	YYYYMMDD date(UTC)	8	0
2	blank	0x20 (delimiter)	1	8
3	Downlink Path Number	P d d d d n n s s s s set by OPLN and SHAQ	11	9
4	blank	0x20 (delimiter)	1	20
5	Downlink Segment Number	Dxxxxdddsss-zz set by OPLN and SHAQ	14	21
6	blank	0x20 (delimiter)	1	35
7	Positional ID of Recording Start	NNNNNN	6	36
8	blank	0x20 (delimiter)	1	42
9	Positional ID of Recording Stop	NNNNNN	6	43
10	blank	0x20 (delimiter)	1	49
11	Begin Date of Recording (UTC)	YYYYMMDD hh:mm:ss	17	50
12	blank	0x20 (delimiter)	1	67
13	End Date of Recording (UTC)	YYYYMMDD hh:mm:ss	17	68
14	Record End	0x0A	1	85
Sum			86	